

What is claimed is:

1. A saw apparatus comprising:

a saw bench for supporting a length of material to be cut on a plane of said saw bench;

5 feed means for feeding a length of material to be cut in a direction of feed relative to said saw bench, while being supported by said saw bench, and while said length of material is being cut, and

a circular saw blade assembly comprising:

a base member mounted relative to said saw bench so as to be movable in a
10 transverse direction across said direction of feed, and

saw blade mounting means for rotatably mounting a circular saw blade on said base member at a predetermined angle relative to said transverse movement direction of said base member in said plane of said saw bench, and having means for connection to a drive source for rotating a circular saw blade when mounted thereon (or comprising
15 drive means).

2. A saw apparatus according to claim 1 further comprising angle adjustment means for adjusting the angle of mounting said saw blade mounting means relative to said base member.

3. A saw apparatus according to claim 2, wherein said angle adjusting means
20 enables angle adjustment from zero degrees to 360 degrees.

4. A saw apparatus according to any one of claims 1 through 3, wherein there is further provided blade depth adjusting means for adjusting the depth of said blade relative to said base member.

5. A saw apparatus according to any one of claims 1 through 4, wherein said saw
25 bench comprises two inclined support means for supporting a length of material along a support plane, said support means being inclined relative to each other, and being inclined to a horizontal plane.

6. A saw apparatus according to any one of claims 1 through 5, wherein said feed device comprises:

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a conveyer belt suspended between belt support rollers which are rotatably mounted on a base structure, at least one of said rollers being adapted for connection to drive means for driving said conveyer belt, and

5 clamping means mounted relative to said base structure for clamping a member to be fed against an outer peripheral surface of said conveyer belt.

7. A saw apparatus according to claim 6, wherein said conveyer belt comprises a toothed belt with a plurality of continuous grooves formed around an outer peripheral surface.

SUB A2 10 8. A saw apparatus according to any one of claims 1 through 7, further comprising saw dust removing means comprising: an intake located relative to a saw blade of said circular saw blade assembly in the vicinity of teeth exiting from a cut, and a suction duct connected to said intake for drawing air in through said intake, wherein said suction duct constitutes a hollow support member of said circular saw blade assembly.

15 9. A saw apparatus according to any one of claims 1 through 8, further comprising discharge means for discharging material that has been cut, to below a feed path, said discharge means comprising a minor support device mounted on a frame by linear bearings so as to be movable sideways.

10. A saw apparatus according to claim 9, wherein said linear bearings are arranged at an incline to said minor support device.

SUB A3 20 11. A saw apparatus according to any one of claims 1 through 10, further comprising outfeed means for supporting and stacking long lengths of wood as they are discharged after being cut.

25 12. A saw apparatus according to claims 11, wherein said outfeed means comprises; a minor support device comprising one row of rollers with a support plane thereof inclined at substantially right angles to the support plane of a major support device, said minor support device being mounted on a main frame of said outfeed device by means of linear bearings so as to be movable sideways, and actuating means for moving said support device sideways.

SUB A4 30 13. A method of operating a saw apparatus according to any one of claim 1 through claim 12, said method involving the steps of:

programming a computer with details of cutting requirements, and dimensions of material to be cut;

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setting components of said saw apparatus to initial positions including setting said saw blade at a predetermined angle;

feeding a length of material to be cut to said feed means;

A4 5. material;

feeding said length of material to a cutting region;

synchronously operating a transverse drive motor of said base member and a feed drive motor of said feed means so as to cut said material at a desired angle; and

releasing said clamping actuator.

10 14. A method of making angled cuts in an elongate member using a circular saw bench along a plane of which an elongate member can be fed in a direction of feed, said method comprising the steps of:

mounting a circular saw blade so as to be movable in a direction transverse to said direction of feed in a plane parallel to said plane of said saw bench,

15 inclining said saw blade at a predetermined angle to said transverse direction in a plane of said saw bench, and

feeding said elongate member along said saw bench in said direction of feed while synchronously moving said circular saw blade in said direction transverse to said direction of feed.

20 15. A feed device comprising:

a conveyer belt suspended between belt support rollers which are rotatably mounted on a base structure, at least one of said rollers being adapted for connection to drive means for driving said conveyer belt, and

25 clamping means mounted relative to said base structure for clamping a member to be fed against an outer peripheral surface of said conveyer belt, wherein said conveyer belt is formed with a plurality of continuous grooves around a peripheral surface thereof.

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16. A method of reducing lengthwise deformation of a conveyor belt when loaded with a transverse compressive load, said method involving forming continuous grooves around a peripheral surface of said conveyor belt.
- 5 17. A method of reducing deviation in longitudinal feed of a conveyor belt feed apparatus comprising; a conveyor belt spanning between rotational support means, and means for holding a member to be fed against an outer surface of said conveyor belt, said method involving forming continuous longitudinal grooves in at least one surface of said conveyor belt.
- 10 18. A saw dust removal device for a circular saw blade assembly, comprising; an intake located relative to a saw blade of said circular saw blade assembly in the vicinity of teeth of said saw blade as they exit from a cut, and a suction duct connected to said intake for drawing air in through said intake, wherein said suction duct constitutes a hollow support member of said circular saw blade assembly.
- 15 19. A saw apparatus substantially as described above with reference to the drawings.
20. A method of cutting wood substantially as described above with reference to the drawings.
21. A conveyor belt feed device substantially as described above with reference to the drawings.
- 20 22. A method of reducing deviation in longitudinal feed of a conveyor belt feed apparatus substantially as described above with reference to the drawings.
23. A saw dust removal device substantially as described above with reference to the drawings.